

**MODELS:** Pratt & Whitney Military Models R-1340 Series

**T.C. NUMBER:** 5E-2

Military model	SR-1340-E	R-1340-19	R-1340-22	R-1340-29	R-1340-36, -40, -47, -49, -49M1, -51, -AN-1	R-1340-AN-2	R-1340-51M1, -53, -57
Type - 9RA	Direct drive	--	--	--	--	Geared 3:2	Direct drive (3:2 for -53 only)
Corresponding certificated Wasp model	S1D1	-53	None	None	S3H1	S3H1G	S1H2
<b>Ratings:</b>							
Maximum continuous, hp, rpm, in.Hg., at:							
Critical altitude (ft.)	550-2200-33-5000	500-2200-33.0-11,400	550-2100-33.5-1700	450-2200-31.0-5000	550-2200-32.5-5000	550-2200-32.5-5000	550-2200-33.0-8000
Sea level	542-2200-23-S.L.	500-2200-33.5-S.L.	550-2100-34.0-S.L.	450-2200-32.0-S.L.	550-2200-34.0-S.L.	550-2200-34.0-S.L.	550-2200-35.0-S.L.
Take-off (5 minutes), at sea level	550-2200-34	500-2200-33.5	550-2100-34.0	450-2200-32.0	550-2200-36.0	600-2250-36.0	600-2250-36.5
Fuel (minimum grade aviation gasoline)	80 octane	87 octane	87 octane	--	80/87 (See NOTE 5)	--	--
Bore and stroke, in.	5.75 x 5.75	--	--	--	--	--	--
Displacement, cu. in.	1344	--	--	--	--	--	--
Compression ratio	6:1	--	--	5.27:1	6:1	--	--
Weight (dry), lbs.	715	--	798	715	(See NOTE 5)	(See NOTE 5)	(See NOTE 5)
Propeller shaft, SAE No.	30	40	30	40	--	--	--
Supercharger (impeller gear ratio)	10:1	14:1	10:1	--	--	--	12:1
Carburetor	NA-Y6C	--	NA-Y8J1	NA-Y7B	NA-Y9B, NA-Y9E1	NA-Y9E1	--
Ignition, dual	VAG-9D magnetos	--	SB9R	VAG-9	Scintilla SB9R or Bosch SB9R2	SB9RN	SB9-RN-4
Ignition timing, degrees BTC	27	--	25	30	25	--	--
Hydraulic propeller provision	None	--	Two position	--	Constant speed (except for -49M1)	Two position	None

NOTE 1. Maximum permissible temperatures are as follows:

	Cylinder head	Cylinder barrel	Oil inlet
R-1340-E, -19, -36, -40, -47, -49, -49M1, -51, -51M1, -53, -57, -AN-1, -AN-2	550 degrees F.	335 degrees F.	200 degrees F.
R-1340-22, -29	550 degrees F.	335 degrees F.	200 degrees F.

NOTE 2. Pressure limits - normal operation:

	Maximum	Minimum
Fuel pressure	6 psi.	3 psi.
Oil pressure	90 psi.	70 psi.

NOTE 3. The following accessory drives are provided:

	Direction of Rotation (Clockwise or Counter-Clockwise)	Speed Ratio (Times Crankshaft Speed)	Maximum Torque (in.lbs.)		Maximum** Overhang (in.lbs.)
			Continuous	Static	
Starter	CC	1.0	2300	10000	180
Generator	C	1.5	100	300	183
Generator (optional)	C	2.0	150	900	183
Fuel pump	CC	1.0	150	450	10
Auxiliary Accessory	CC	1.0	150*	450	10
Tachometer					
R.H.	C				
L.H.	CC	.5	15	45	10
	C	1.144	60	250	--
Vacuum pump	C	1.5	100*	300	10

\*Maximum combined drive load of vacuum pump and fuel pump must not exceed 150 in.lbs.

\*\*Maximum allowable accessory moments in inch pounds, provided no destructive accessory drive or mounting pad forces resulting from accessory vibration are present. Early Wasp engines incorporate tongue and groove fuel and vacuum pump drives. All later engines have spline type drives.

NOTE 4. When incorporated in certificated aircraft, the engine name-plate should be stamped, "CAA Spec. No. 5E-2." If there is no room for this information on the existing name-plate, such information may be stamped on a plain thin metal plate attached beneath the existing plate by at least two of the mounting screws. When a new model designation is required because of changes to the engine, the new designation should be added to the name-plate.

NOTE 5. The following engines incorporate the additional detailed characteristics:

R-1340 Model	Wt. dry, lbs.	Similar Certificated Wasp	Characteristics
-36	865 lbs. with magnesium rear section 878 lbs. with aluminum rear section	S3H1	Incorporates spline type vacuum and fuel pump drives. Eligible at the 550 hp rating for maximum continuous and take-off with 80 octane fuel. When the 80/87 grade fuel is not available, the next higher grade 91/96 should be used with the 600 hp rating.
-40	865 lbs. with magnesium rear section	S3H2	Similar to -36 except dry weight. Engine is designed for operation with the crankshaft in

	878 lbs. with aluminum rear section		a position approximately 45 degrees to the horizontal in helicopters. This has been accomplished by a means of a special carburetor adapter and revisions to the engine lubricating system. Only the forged nose case, P/N 37902, is to be used on the helicopter engines.
-47	865 lbs. with magnesium rear section 878 lbs. with aluminum rear section	S3H1	Similar to -36 except engines incorporate tongue type vacuum and fuel pump drives.
-49	865 lbs. with magnesium rear section 878 lbs. with aluminum rear section	S3H1	Similar to -36.
-49M1	865 lbs. with magnesium rear section 878 lbs. with aluminum rear section	S3H1	Similar to -36 and -40 except for dry weight.
-51	865 lbs. with magnesium rear section 878 lbs. with aluminum rear section	S3H1	Similar to -36.
-51M1	865 lbs. with magnesium rear section 878 lbs. with aluminum rear section	S1H2	Similar to -36 except with 12:1 ratio blower.
-53	930	S1H1-G	Similar to -AN-2 except with 12:1 ratio blower.
-57	868	S1H2	Similar to -40 except for dry weight and 12:1 ratio blower.
-AN-1	865 lbs. with magnesium rear section 878 lbs. with aluminum rear section	S3H1	Similar to -36 except engine No. P326794 modified to include (1) 12:1 ratio blower parts used in Civil Wasp S1H1 engines, (2) provision for hydromatic propeller, (3) the S1H1 carburetor settings, and is similar to the S1H1 model and has the same ratings as the -36.
-AN-2	938	S3H1-G	Similar to -36, except for dry weight.

NOTE 6. The following spark plugs are approved on these engines: AC S86K, SR-83P, HSR-83P, HSR-86; Autolite SH-2K, SH-2M, SH-20, SH-20A; RG 321S, 417S, SS485A, RB485S, 706SR; Champion C27S, C34S, RC26S, ED41N, EM41N, FD39N, RHD39N, REM39N, RHM39N, REM40E, RHM40E.